85

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/781,735	02/12/2001	Yang Gao	10932/159	7998

25700 7590 04/13/2004

FARJAMI & FARJAMI LLP
26522 LA ALAMEDA AVENUE, SUITE 360
MISSION VIEJO, CA 92691

EXAMINER	
JACKSON, JAKIEDA R	
ART UNIT	PAPER NUMBER
2655	17

DATE MAILED: 04/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.	Applicant(s)
	09/781,735	GAO ET AL.
	Examiner	Art Unit
	Jakieda R Jackson	2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19, 21-27 and 29-38* is/are rejected.

7)☒ Claim(s) *20 and 28* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *12 February 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 4.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The Specification and the claims are objected to because of the following informalities:

- There is inconsistent use of the terminology MIRS. "Modified Intermediate Response System" versus the Specification referring to "Modified Intermediate **Reference** System" (recommended by the ITU-T Recommendation P.48), which apparently was intended. The examiner has interpreted the former as the latter.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. **Claims 1-4, 6, 16-19, 21-23, 25-26, 29-32, 34 and 38** are rejected under 35 U.S.C. 103(a) as being unpatentable by Kroon (U.S. Patent No. 5,664,055) in view of Kurdziel (U.S. Patent No. 5,692,098).

Regarding **claim 1**, Kroon discloses a method for conditioning a speech signal in preparation for coding of the speech signal (preprocessor; figure 3, element 100; column 4, lines 49-62), the method comprising the steps of:

accumulating samples (copying samples) of the speech signal (speech signal; column 1, lines 27-33); and

evaluating the accumulated samples (column 14, lines 21-40) associated with the minimum sampling period to obtain a representative sample (model; column 1, lines 27-33), but Kroon lacks at least a minimum sampling duration.

However, it would have been obvious to one of ordinary skill in the art to accumulate the samples over at least a minimum sampling duration to properly ensure that the spectral slope can be reasonably accurately computed, which is well known in the art.

Kroon also lacks the method comprising the steps of:

determining whether a slope of the representative sample of the speech signal conforms to a defined characteristic slope stored in a reference database of spectral characteristics; and

selecting one of the first filter and a second filter for application to the speech signal prior to the coding based on the determination on the slope of the representative sample.

Kurdziel discloses the method comprising:

determining whether a slope of the representative sample (initial analysis frames; column 3, lines 42-52) of the speech signal conforms to a defined characteristic slope

stored in a reference database of spectral characteristics (column 4, lines 46-54), to remove any spectral tilt; and

selecting one of the first filter (pre-emphasis filter) and a second filter (high-pass filter; column 3, lines 40-41) for application to the speech signal prior to the coding based on the determination on the slope of the representative sample (initial analysis frames; column 3, lines 6-52), to cancel out pre-emphasis as needed.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kroon's invention such that it determines whether a slope of the representative sample of the speech signal and selects one of the first filter (if negative slope) and a second filter (if flat) for application to the speech signal prior to the coding based on the determination on the slope of the representative sample to flatten the spectrum for speech to prevent LPC instability, which is well known in the art.

Regarding **claims 2 and 30**, Kroon discloses a method and system for conditioning a speech signal in preparation for coding of the speech signal but lacks disclosing the method and the system comprising selecting the first filter if a slope of the representative sample of the speech signal conforms to the defined characteristic slope in accordance with determining step. Kurdziel discloses the method and the system comprising selecting the first filter (pre-emphasis filter) if a slope of the representative sample (initial analysis frames; column 3, lines 6-52) of the speech signal conforms to the defined characteristic slope (removes spectral tilt; column 6, lines 36-44) in

accordance with determining step, to flatten the spectrum to adequately quantize the high frequency components (column 3, lines 6-10).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kroon's invention such that it selects the first filter if a slope of the representative sample of the speech signal conforms to the defined characteristic slope in accordance with determining step to improve the quality of an audio signal (column 1, lines 58-62).

Regarding **claims 3 and 31**, Kroon discloses a method and system for conditioning a speech signal in preparation for coding of the speech signal but lacks disclosing the method and the system further applying the first filter to lessen a slope of the speech signal to approach a flatter spectral response in preparation for the coding. Kurdziel teaches the method and the system further applying the first filter (pre-emphasis filter; figure 1, element 12) to lessen a slope of the speech signal to approach a flatter spectral response in preparation for the coding (equalize or flatten the spectrum; column 3, lines 1-10), to remove spectral tilt to flatten the spectrum.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kroon's invention such that it applies the first filter to lessen a slope of the speech signal to approach a flatter spectral response in preparation for the coding as taught by Kurdziel, to improve frequency response of a signal, which is well known in the art.

Regarding **claims 4 and 32**, Kroon discloses a method and system for conditioning a speech signal in preparation for coding of the speech signal but lacks

selecting the second filter if a slope of the representative sample of the speech signal is flat in accordance with the determining step. Kurdziel discloses the method and the system comprising selecting the second filter (high pass RC filter) if a slope of the representative sample of the speech signal is flat (column 3, lines 6-41 and claim 5) in accordance with the determining step, to pass the speech through.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kroon's invention such that it selects the second filter if a slope of the representative sample of the speech signal is flat in accordance with the determining step to pass the speech through since the speech signal is already flat due to the pre-emphasis filter.

Regarding **claims 6 and 34**, Kroon discloses the method and the system comprising averaging the accumulated samples (copying past samples) to obtain the representative sample (model; column 1, lines 27-33), but Kroon lacks accumulating these samples over the minimum sampling duration.

However, it would have been obvious to one of ordinary skill in the art to accumulate the samples over at least a minimum sampling duration to properly ensure that the spectral slope can be reasonably accurately computed, which is well known in the art.

Regarding **claim 16**, Kroon discloses the method further comprising adjusting a bandwidth expansion of the speech signal to change a value of a linear predictive coefficient (LP coefficients) for at least one of a synthesis filter and an analysis filter (analysis-by-synthesis search procedure) from the previous value (original) to a revised

value (synthesized) based on a degree of slope or flatness in the speech signal (weighted distortion; column 4, lines 49-64 and column 12, lines 16-67).

Regarding **claim 17**, Kroon discloses a method and system for conditioning a speech signal in preparation for coding of the speech signal but lacks the following equation:

$$1 / A(z) = 1 / (1-(\text{summ } I = 1\ldots P)\ a_{i\ \text{revised}}\ z^{-i})\ \text{(column 12, line 21)}$$

where 1/A(z) is a filter response represented by a z transfer function (1/A(z)), $a_{i\ \text{revised}}$ is a linear predictive coefficient (a_i), I = 1...P (i = 1...10), and P is the prediction order or filter order of the synthesis filter,

$$a_{i\ \text{revised}} = a_{i\ \text{previous}}\ \text{gamma}^{I}$$

where $a_{i\ \text{revised}}$ is a revised linear predictive coefficients, $a_{i\ \text{previous}}$ is a previous linear predictive coefficient, gamma is the bandwidth expansion constant, I = 1...P, and P is the prediction order of the synthesis filter of the encoder, and where $a_{i\ \text{previous}}$ represents a member of the set of extracted linear predictive coefficients $\{a_{i\ \text{previous}}\}P_{I=1}$, for the synthesis filter of the encoder, to improve audio quality. However the positive sign can be interpreted as being a_i can be either positive or negative.

Regarding **claim 18**, Kroon discloses the method where the value of the bandwidth expansion constant (figure 5; f sub o) for a generally flat spectral response differs from that of the defined characteristic slope (column 17, lines 29-34).

Regarding **claim 19**, Kroon discloses the method where the value of the bandwidth expansion constant (figure 5; f sub o) is greater for a generally flat spectral response that the defined characteristic slope (column 17, lines 29-34).

Regarding **claim 21**, Kroon discloses the method further comprising adjusting a frequency response (adjustment of frequency response) of a perceptual weighting filter (perceptual weighting filter) based on a degree of slope or flatness in the speech signal (flat; column 16, line 65 – column 17, line 34).

Regarding **claim 22**, Kroon discloses the method further comprising adjusting a frequency response of a perceptual weighting filter based on the following equation:

Equation (column 17, line 1)

where alpha is weighting constant, beta (gamma$_2^i$) and p (gamma $_1^i$) are present coefficients, p (10) is the predictive order, and {ai} (alpha$_i$) is the linear predictive coding coefficient, but lacks the use of the de-emphasis filter (1 / 1-alpha z^{-1}).

However, it would have been obvious to one of ordinary skill to use a de-emphasis filter with and decoder to undo the spectral tilt of the encoder to obtain an actual spectral weight instead of a modified version of the spectral weight.

Regarding **claim 23**, Kroon discloses the method wherein the adjusting step comprising selecting different values of the weighting constant alpha (weight factors) to adjust the frequency response (adjustment of frequency response) of the perceptual weighting filter (perceptual weighting filter) in response to the determined slope or flatness of the speech signal (flat; column 16, line 65 – column 17, line 34).

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to cancel pre-emphasis for perceptual weighting, which allows the actual signal to be coded.

Regarding **claim 25**, Kroon discloses the method further comprising the step of adjusting a frequency response of a post filter (column 29, lines 43-44) coupled to an output of a decoder (decoder output; column 28, lines 10-44) based on a degree of slope or flatness of the speech signal (column 17, lines 29-50).

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to undo pre-emphasis for perceptual weighting, which allows the actual signal to be coded.

Regarding **claim 26**, Kroon discloses the method further comprising the step of adjusting a frequency response of a post filter in accordance with the following equation:

Equation (column 17, line1)

where gamma1 and gamma1 ((gamma$_2^i$) and (gamma $_1^i$)) represents a set of post filtering weighting constants, {ai} (alpha$_i$) is the linear predictive coding coefficient, and P (10) is the filter order of the post filter.

Regarding **claim 29**, Kroon discloses a system for conditioning a speech signal prior to coding of the speech signal (preprocessor; figure 3, element 100; column 4, lines 49-62), the system comprising:

a buffer memory (memory) for accumulating samples of the speech signal (column 1, lines 27-33).

However Kroon does not specifically mention a buffer memory and does not specifically mention accumulating these samples over the minimum sampling duration.

It would have been obvious to one of ordinary skill in the art that the memory for accumulating samples was a buffer memory for the purpose of flow control and sampling over at least a minimum sampling duration to properly ensure that the spectral slope can be computed, which is well known in the art.

Kroon 's system for conditioning a speech signal prior to coding of the speech signal also comprises:

an averaging unit (table 5; moving average predictor codebook) for evaluating the accumulated samples to obtain a representative sample; and

a storage device (efficient storage procedure; column 22, lines 32-34) adapted to store spectral characteristics for classifying the speech as a closest one of a defined characteristic slope and a flat speech signal (column 17, lines 29-34), but lacks an evaluator and a selector. Kurzdiel discloses:

an evaluator adapted to determine whether a slope of the representative sample (initial analysis frames; column 3, lines 42-52) of the speech signal conforms to a defined characteristic slope (column 4, lines 46-54), to remove any spectral tilt; and

a selector for selecting a preferential one of the first filter (pre-emphasis filter) and a second filter for application to the speech signal prior to the coding based on the determination on the slope of the representative sample, (initial analysis frames; column 3, lines 6-52), to cancel out pre-emphasis.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kroon's invention such that it determines whether a slope of the representative sample of the speech signal and selects one of the first filter and a second filter for application to the speech signal prior to the coding based on the determination on the slope of the representative sample to equalize or flatten the spectrum for voiced speech to prevent instability, which is well known in the art.

Regarding **claim 38**, Kroon discloses a system where the evaluator is coupled to an encoder, where the evaluator sends a flatness or slope indicator to the encoder for controlling coding parameters (column 7, line 66 – column 8, line, 9) of a group consisting of pitch gains per frame or subframe (pitch gain beta per subframe; column 21, lines 51-52), at least one filter of a perceptual weighting filter of the encoder (figure 3, element 165; column 4, lines 49-64), at least one filter coefficient of a synthesis filter of the encoder (column 7, line 66 – column 8, line 9), at least one bandwidth expansion constant (table 5; f sub o) associated with a synthesis filter of at least one of the encoder and a decoder, at least one bandwidth expansion constant (table 5; f sub o) associated with a synthesis filter of a decoder (column 12, line 16 – column 13, line 6), at least one bandwidth expansion constant (table 5; f sub o) associated with an analysis filter of an encoder (column 12, line 16 – column 13, line 6), and at least one filtering coefficient associated with a post filter coupled to a decoder (post filter; column 8, lines 30-37) for performing an inverse signal processing operations with respect to the encoder (column 27, lines 49-67).

4. **Claims 5, 7-9, 24, 33 and 35-36** are rejected under 35 U.S.C. 103(a) as being unpatentable by Kroon in view of Kurdziel in further view of well known prior art.

Regarding **claims 5 and 33**, Kroon in view of Kurdziel discloses a method and system for conditioning a speech signal in preparation for coding of the speech signal but lacks applying the second filter to increase a slope of the spectral response of the speech signal to approach a more sloped spectral response than the flat spectral response in preparation for the coding.

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to apply the second filter to increase a slope of the spectral response of the speech signal to approach a more sloped spectral response than the flat spectral response in preparation for the coding, if the coder is designed for MIRS, which has a positive spectral slope.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kroon's invention such that it applies the second filter to increase a slope of the spectral response of the speech signal to approach a more sloped spectral response than the flat spectral response in preparation for the coding to increase the slope if the coder is designed for MIRS for improved quality of the reconstructed signal (column 2, lines 14-18).

Regarding **claims 7 and 35**, Kroon in view of Kurdziel discloses a method for conditioning a speech signal in preparation for coding of the speech signal but lacks the

method and the system further comprising assuming the spectral response of a speech signal is sloped in accordance with the defined characteristic slope corresponding to a typical input speech signal prior to completion of at least one of the accumulating step and determining step.

However, it would have been obvious to one of ordinary skill in the art to assume the spectral response of a speech signal is sloped in accordance with the defined characteristic slope corresponding to a typical input speech signal prior to completion of at least one of the accumulating step and determining step, to minimize having to switch filters after spectral pre-processing.

Regarding **claim 8**, Kroon in view of Kurdziel discloses a method for conditioning a speech signal in preparation for coding of the speech signal but lacks the method comprising selecting the first filter as an initial default filter based on the assumption that the spectral response of the speech signal is sloped in accordance with the defined characteristic slope.

However, it would have been obvious to one of ordinary skill in the art to select the first filter as an initial default filter based on the assumption that the spectral response of the speech signal is sloped in accordance with the defined characteristic slope corresponding to a typical input speech signal, to minimize having to switch filters after spectral pre-processing.

Regarding **claims 9 and 36**, Kroon discloses a method and system for conditioning a speech signal in preparation for coding of the speech signal but lacks

where the defined characteristic slope approximately represents a Modified Intermediate Response System (MIRS).

However, it would have been obvious to one of ordinary skill in the art at the time the invention was made to consider a MIRS spectrum so as to be able to use the system for an internationally-recognized **reference** spectral shape in telecommunications.

Regarding **claim 24**, Kroon in view of Kurdziel discloses a method for conditioning a speech signal in preparation for coding of the speech signal but lack the method further comprising controlling the value alpha based on the spectral response of the speech signal such that alpha approximately equals .2 where the speech signal is consistent with MIRS spectral response and alpha approximately equals 0 where the speech signal is consistent with a generally flat signal response.

However, it would have been obvious to one of ordinary skill in the art to control the value alpha based on the spectral response of the speech signal such that alpha approximately equals .2 where the speech signal is consistent with MIRS spectral response and alpha approximately equals 0 where the speech signal is consistent with a generally flat signal response because it is obvious not to pre-emphasize if the spectrum is already flat. That is, since the MIRS spectrum has a positive spectral slope, one obviously needs to reduce the spectral slope so as to get a flattened spectrum. If the speech spectrum is already flat (read on "conforms" or "in accordance with the defined characteristic slope"), there is no need to change it, thus a different filter (which does not essentially change spectral shape) is needed.

5. **Claims 10-15, 27 and 37** are rejected under 35 U.S.C. 103(a) as being unpatentable by Kroon in view of Kurdziel in further view of Miseki et al. (U.S. Patent No. 5,864,798), hereinafter referenced as Miseki.

Regarding **claims 10 and 37**, Kroon in view of Kurdziel discloses a method and system for conditioning a speech signal in preparation for coding of the speech signal but lacks adjusting at least one encoding parameter to a revised encoding parameter for an encoding process, the at least one encoding parameter affiliated with the selecting of one of the first and the second filter. Miseki discloses the method and the system further comprising adjusting at least one encoding parameter (column 21, lines 7-12) to a revised encoding parameter (converted encoding parameters) for an encoding process, the at least one encoding parameter affiliated with the selecting of one of the first (synthesis filter; column 21, lines 56-67 and column 24, lines 21-33) and the second filter, to undo pre-emphasis.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kroon's invention such that it adjusts at least one encoding parameter to a revised encoding parameter for an encoding process, the at least one encoding parameter affiliated with the selecting of one of the first and the second filter because Miseki teaches that the filter makes it possible to select codes which faithfully represent original sound. As a result, the quality of sound reconstructed

is improved, without increasing the bit rate remains or using a high-efficiency encoding system (column 21, lines 13-19).

Regarding **claim 11**, Kroon discloses the method where the adjusting step comprises adjusting an encoding parameter selected from the group consisting of pitch gains per frame or subframe (pitch gain Beta per subframe; column 21, lines 51-52), at least one filter coefficient of a perceptual weighting filter (figure 3, element 165; column 4, lines 49-64), at least one bandwidth expansion constant (table 5; f sub o) associated with a synthesis filter (synthesis filter), and at least one bandwidth expansion constant (f sub o) associated with an analysis filter (analysis filter; column 12, line 16 – column 13, line 6) .

Regarding **claim 12**, Kroon in view of Kurdziei discloses a method and system for conditioning a speech signal in preparation for coding of the speech signal but lacks adjusting at least one decoding parameter to a revised decoding parameter for a decoding process, the at least one decoding parameter affiliated with the selecting of one of the first filter and the second filter. Miseki discloses the method further comprising the step of adjusting at least one decoding parameter (figure 1, element 101) to a revised decoding parameter (changing the value of a parameter; column 2, lines 6-15) for a decoding process, the at least one decoding parameter affiliated with the selecting of one of the first filter and the second filter (figure 8; column 1, lines 20-30 and column 4, lines 30-34), to undo pre-emphasis.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kroon's invention such that it adjusts at least one

decoding parameter to a revised decoding parameter for a decoding process, the at least one decoding parameter affiliated with the selecting of one of the first filter and the second filter because Miseki teaches that this will enhance the speech quality of the decoded speech and synthesis speech (column 21, lines 13-19).

Regarding **claim 13**, Kroon discloses the method where adjusting a decoding parameter (decoding parameters; column 8, lines 7-9) selected from the group consisting of at least one bandwidth expansion constant (table 5; f sub o) associated with a synthesis filter (synthesis filter; column 12, line 16 – column 13, line 6) and at least one linear predictive filter coefficient (LP filter) associated with a post filter (post filter; column 8, lines 30-37).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to consider a MIRS spectrum so as to be able to use the system for an internationally-recognized **reference** spectral shape in telecommunications.

Regarding **claim 14**, Kroon in view of Kurdziel discloses a method and system for conditioning a speech signal in preparation for coding of the speech signal but lacks adjusting at least one coding parameter to a revised coding parameter for at least one of an encoding and decoding process, the at least one coding parameter affiliated with the selecting of one of the first filter and the second filter. Miseki discloses the method further comprising the step of adjusting at least one coding parameter (column 21, lines 7-12) to a revised coding parameter (converted encoding parameter) for at least one of an encoding (encoding side) and decoding process, the at least one coding parameter

affiliated with the selecting of one of the first filter (synthesis filter; column 21, lines 56-67 and column 24, lines 21-33) and the second filter, to undo pre-emphasis.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kroons invention such that it adjusts at least one coding parameter to a revised coding parameter for at least one of an encoding and decoding process, the at least one coding parameter affiliated with the selecting of one of the first filter and the second filter because Miseki teaches that this will enhance the speech quality of the decoded speech and synthesis speech (column 21, lines 13-19).

Regarding **claim 15**, Kroon discloses the method where the adjusting step comprises adjusting a coding parameter (column 7, line 66 – column 8, line, 9) selected from the group consisting of pitch gains per frame or subframe (pitch gain beta per subframe; column 21, lines 51-52), at least one filter coefficient of a perceptual weighting filter (figure 3, element 165; column 4, lines 49-64), at least one bandwidth expansion constant (table 5; f sub o) associated with a synthesis filter, at least one bandwidth expansion constant associated with and analysis filter (column 12, line 16 – column 13, line 6), and at least one linear predictive filter (LP filter) coefficient associated with a post filter (post filter; column 8, lines 30-37).

Regarding **claim 27**, Kroon in view of Kurdziel discloses a method and system for conditioning a speech signal in preparation for coding of the speech signal but lacks adjusting a frequency response of a post filter by selecting different values of post-filtering weighting constants of gamma1 and gamma 2 in response to the determined slope or flatness of the speech signal. Miseki discloses the method further comprising

the step of adjusting a frequency response of a post filter by selecting different values of post-filtering weighting constants of gamma1 (gamma) and gamma 2 (gamma') in response to the determined slope or flatness of the speech signal (flat), to stably effect the pitch tilt compensation (column 13, lines 10-21).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Kroon's invention such that it adjusts a frequency response of a post filter by selecting different values of post-filtering weighting constants of gamma1 and gamma 2 in response to the determined slope or flatness of the speech signal because Miseki teaches that this will enhance the speech quality of the decoded speech and synthesis speech (column 21, lines 13-19).

Allowable Subject Matter

6. **Claims 20 and 28** are objected to because:

Claim 20 recites a method and system for conditioning a speech signal in preparation for coding of the speech signal. Prior art such as Kroon show similar methods and systems but fails to teach the recited methods and systems wherein gamma is set to a first value of approximately .99 if the slope of the representative sample is consistent with an MIRS spectral response and gamma is set to a second value of approximately .995 where the slope of the representative sample is generally flat or approaches zero, to adjust the general tilt.

Claim 28 recites a method and system for conditioning a speech signal in preparation for coding of the speech signal. Prior art such as Kroon show similar

methods and systems but fails to teach the recited methods and systems wherein gamma1 and gamma2 approximately equal .65 and .4, respectively, if the speech signal is consistent with an MIRS spectral response; and where gamma1 and gamma2 approximately equal .63 and .4, respectively, if the speech signal is consistent with a generally flat signal response.

Therefore, **claims 20 and 28** would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington,* 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

8. **Claims 1-2, 4, 6-9, 11, 13, 15-30, 32 and 34-38** are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over **claims 1-31** of copending Application No. 09/783,822. Although the conflicting claims are not identical, they are not patentably distinct from each other because selecting one of a first filter and a second filter, which is claimed in copending application No. 09/781, 735, would lead to a coding parameter, which is claimed in of copending Application No. 09/783,822, because the filter changes the signal. The pre-processor filter parameter (pre-emphasis filter) is part of the coder. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made

that the coding parameter (mentioned in claims 1-3, 6, 8-10, 24-26 and 30-31 of copending Application No. 09/783,822) is actually the preprocessing for the filter.

This is a provisional obviousness-type double patenting rejection because the claims have not in fact been patented.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- U.S. Patent No. 6,617,371 to Miet et al. discloses a speech filter for digital electronic communications

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jakieda R Jackson whose telephone number is 703.305.5593. The examiner can normally be reached on Monday through Friday from 7:30 a.m. to 5:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talivaldis I. Smits can be reached on 703. 306-3011. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JRJ
March 23, 2004

TĀLIVALDIS IVARS ŠMITS
PRIMARY EXAMINER